# 8.0 REVISED SMALL ENTITY ASSESSMENT

This chapter updates EPA's analysis and statements with respect to three federal directives: Executive Order 12886 (Regulatory Planning and Review), including the Regulatory Flexibility Act (RFA) of 1980, as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996; Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations; and the Unfunded Mandates Reform Act (UMRA) of 1995. In particular, because the cost in Chapter 4 has been revised, EPA revised the analysis presented in the initial SBREFA screening analysis, which was included in the EA for the proposed rule. Section 8.1 presents the results of the revised screening analysis. EPA will certify the final Phase II Storm Water Rule. A justification for certifying the rule is provided in the Preamble. Environmental justice issues are addressed in Section 8.2, and UMRA issues are addressed in Section 8.3.

## 8.1 Revised SBREFA Analysis of Impacts on Small Entities

In accordance with §402(p) of the Clean Water Act (CWA), the US Environmental Protection Agency (EPA) is finalizing a Phase II Storm Water rule. This rule is subject to the requirements of the Regulatory Flexibility Act of 1980 as amended by the Small Business Regulatory Enforcement Fairness Act of 1996. The analysis of the potential cost implications for small entities presented in the EA for the proposed rule supported the determination that the rule was not expected to have a significant impact on a substantial number of small entities. In response to comments, EPA revised its cost analysis for the soil erosion control provision of the rule. EPA also revised the per household cost estimate for the municipal minimum measures provision. EPA subsequently revised its original SBREFA screening analyses to determine the effect of the cost changes.

The RFA was enacted to increase agency awareness of the impacts of regulations (and their alternatives) on small entities, to allow for public comments on regulations that affect small entities, and to encourage agency use of flexibility in regulating small entities (US EPA, 1992). SBREFA amended the RFA to strengthen its analytical and procedural requirements. Under the RFA as amended, agencies are required to prepare a final regulatory flexibility analysis (FRFA) unless the agency certifies that the final rule will not have a significant economic impact on a substantial number of small entities. EPA is including the following revisions to the original economic impact analysis for small entities in this EA, as further support for the decision to certify the final rule.

The original economic analysis of potential impacts on small entities was prepared following *EPA's Interim Guidance for Implementing the Small Business Regulatory Enforcement Fairness Act and Related Provisions of the Regulatory Flexibility Act* (US EPA, 1997a) and, where appropriate, *EPA Guidelines for Implementing the Regulatory Flexibility Act* (US EPA, 1992). This section presents mainly those portions of the analysis that have been updated.

### 8.1.1 Background

Storm water runoff from lands modified by human activities can harm surface water resources in two ways: (1) by changing natural hydrologic patterns (e.g., increasing peak flow levels), and (2) by elevating pollution concentrations and loadings. The National 1996 §305(b) Report found that pollution from nonpoint sources such as runoff from agricultural and urban sources, construction sites, land disposal of waste, and resource extraction was the leading cause of impaired waters (see also the Preamble to the rule). In addition, the Nationwide Urban Runoff Program found that the concentration of total suspended solids in runoff from residential and commercial sites was 239 mg/L as compared to 20 mg/L in effluent from treatment plants providing secondary treatment (see Preamble). Evidence also suggests that illicit discharges and intensive construction activities can create severe water quality problems. As described more completely in the Preamble to the proposed rule, storm water runoff continues to harm the nation's waters. The purpose of the proposed regulation is to identify storm water sources that need to be regulated to protect water quality and to regulate these sources through a comprehensive program.

Some nonpoint sources of pollution are exempt from the National Pollutant Discharge Elimination System (NPDES) program; however, urban storm water runoff is generally discharged through discrete conveyances such as municipal separate storm sewer systems, which are subject to the NPDES program. Under §402(p) of the CWA, EPA is required to implement a comprehensive approach for addressing storm water discharges. In the statute, Congress specified that this program should be developed and implemented in two phases. The first phase addresses storm water discharges that:

- were subject to a NPDES permit before February 4, 1987
- are associated with industrial activity
- are from a municipal separate storm sewer system serving a population of 250,000 or more
- are from a municipal separate storm sewer system serving a population of 100,000 or more but fewer than 250,000
- are determined to be contributing to a violation of a water quality standard or to be a significant contributor of pollutants.

The rule implements Phase II by instituting regulations for other storm water discharges. In accordance with §402(p)(6), this rule establishes a comprehensive program to regulate designated sources, and specifies that this program will be implemented as part of the NPDES permitting program. At a minimum, this program is required to establish priorities, requirements for state storm water management programs, and expeditious deadlines.

The Phase II rule will regulate:

- all construction sites disturbing between one and five acres of land
- urbanized places and counties not included in Phase I (see the Preamble for additional details on the rule requirements).

### 8.1.2 Small Entities Affected by Rule

EPA used the definitions of small businesses, municipalities, and not-for-profit organizations established by the Small Business Administration (SBA) and the RFA. The SBA defines small businesses based on Standard Industrial Classification (SIC) and size standards expressed either in number of employees or annual receipts in millions of dollars (13 CFR §121.20). To evaluate the economic impact on small entities involved in the construction activity affected by the rule, EPA looked at the number of building contractors considered to be small businesses. For this SIC (SIC 15), the size standard is up to $17.0 million in annual revenues. In the EA for the proposed rule, EPA reported results from a database of businesses (Dun and Bradstreet, 1997) that was used to identify small building contractors. This estimate is believed to still be a reasonably accurate estimate of the number of construction businesses that may be affected by either the soil erosion provision or the post-construction control provision of the final rule.

The RFA defines small governmental jurisdictions and organizations (US EPA, 1992). A small government is the government of a city, county, town, school district, or special district with a population of fewer than 50,000. A small organization is any not-for-profit enterprise that is independently owned and operated, and is not dominant in its field. To evaluate the potential economic impact on small municipalities, EPA looked at the unurbanized places, urbanized places, and urbanized counties with populations of fewer than 50,000 based on the 1990 Census. EPA did not identify any not for profit organizations that would be affected by the rule. The original SBREFA estimate of small municipalities included incorporated places located outside of an urbanized area, and incorporated places and counties located either fully or partially within an urbanized area. EPA has since revised this estimate to include the minor civil divisions (i.e., unincorporated towns and townships), and municipios located fully or partially within an urbanized area, and to exclude the incorporated places located outside of an urbanized area since they are not automatically covered by the rule. The number of small businesses and the revised number of municipalities affected by the rule is shown in Exhibit 8–1.

### 8.1.3 Compliance Requirements

This section describes the projected reporting, recordkeeping, and other compliance requirements (and compliance costs) of the proposed rule, including the estimated classes of small entities subject to the requirements and the type of skills necessary for the preparation of reports or records. This section also provides initial screening analysis of the potential impact of these requirements, and analysis of environmental justice issues. The reporting, recordkeeping, and other compliance requirements are described in Section 8.1.4. Section 8.1.5 presents the screening analysis of the potential economic impacts on the regulated small entities. Section 8.1.6 contains further financial analysis on home buyers who might be impacted.

**Exhibit 8–1. Businesses and Municipalities Potentially Affected by the Phase II Storm Water Regulations**

| Business or Municipality | Total Number of Firms | Number of Small Entities[1] |
|---|---|---|
| Construction | 189,453[2] | 187,610[3] |
| Incorporated Places, Counties, and MCDs | 5,040 | 4,425 |
| Municipios (Puerto Rico) | 39 | 30 |
| Total Municipalities | 5,079 | 4,455 |

[1]Small municipalities defined as municipalities with populations of fewer than 50,000; small businesses in SIC 15 defined as businesses with annual revenues of $17 million or less.
[2]Number of construction firms in SIC 15 with sales > $0 identified in Dun & Bradstreet's FACTS database. Firms in states with equivalent soil erosion control programs (CT, DC, DE, MD, MI, NC, NJ, PA, PR, and SC) were removed from the original estimate. Because additional states with equivalent programs were subsequently identified (FL, GA, NH, VI, WV, and WI), this estimate potentially overstates the number of construction firms affected by that provision. Thus far, EPA has identified that seven states (AK, DE, FL, MD, PA, RI, and SC) have equivalent programs for the post-construction runoff control provision. Consequently, this estimate includes some businesses that will not be affected by that provision and excludes some businesses that will be affected.
[3]Number of small construction firms in SIC 15 identified in Dun and Bradstreet (1997). Note that there is no way to distinguish which firms are involved in remodeling only.

*Source:* US EPA, 1997.

The reporting, recordkeeping, and other compliance requirements of the proposed rule are summarized in Exhibit 8–2, which also presents EPA's estimates of the cost of compliance for the affected small municipalities and construction contractors. EPA's analysis of costs did not explicitly consider the costs for small municipalities and construction sites; however, EPA expects the costs to small entities to be less than for all entities. Therefore, Exhibit 8–2 reports the average cost for construction sites and municipalities. These estimates serve as an upper bound on costs to the affected small entities. The bulk of the costs for municipalities are reported on a per capita basis, with additional fixed administrative costs reported on a per entity basis. Building contractor cost estimates are reported on a per site basis.

***Reporting Requirements***

Regulated municipalities will be required to submit annual reports to the NPDES permitting authority for their first permit term (a permit term is five years). For subsequent permit terms, regulated entities must submit reports in the second and fourth years unless the permitting authority requires more frequent reports. The report must include the following elements:

- The status of compliance with permit conditions, including the status of identified Best Management Practices (BMPs) and measurable goals for each of the minimum control measures
- Results of information collected and analyzed, including monitoring data, if any, during the reporting period
- A summary of the storm water activities the regulated entity plans to undertake in the next reporting cycle
- A change in any identified measurable goals that apply to the program elements.

EPA estimates that the skill level needed for reporting is a high school education or related work experience. However, in accordance with §122.22(a)(3), reports must be signed by either a principal executive officer or ranking elected official (US EPA, 1997b).

Building contractors will be required to submit a notice of intent (NOI) to the NPDES permitting authority, and to notify the municipality of planned construction activities. EPA estimates that the skill level needed for this task is a high school education or related work experience (US EPA, 1997b).

**Exhibit 8–2. Summary of Compliance Requirements and Estimated Costs of the Phase II Storm Water Rule for Small Municipalities and Building Contractors (1998 dollars)**

| Small Municipalities | | Building Contractors | |
|---|---|---|---|
| **Per household costs (mean)[1]** | **$8.93** | **Administrative costs per site** | |
| The per household costs include the cost for: public education and outreach, public involvement, illicit connection and discharge detection and elimination, construction site sediment and erosion control program, post-construction storm water management in new development and redevelopment, pollution prevention/good housekeeping of municipal operations | | Submittal of NOI<br>Notification of municipalities<br>Average SWPPP[3]<br>Retention of records<br>Notice of termination (NOT)<br>**Total administrative costs** | $126.50<br>$17.10<br>$772.25<br>$4.51<br>$17.10<br>**$937.46** |
| **Fixed Municipal Administrative costs[2]** | | **Soil erosion control costs per site[4]** | |
| Submittal of application<br>Record keeping<br>Reporting<br>**Total fixed costs** | $161<br>$75<br>$1,289<br>**$1,525** | **Size Category**<br>**1 acre site**<br>**3 acres site**<br>**5 acres site** | <br>$1,206<br>$4,598<br>$8,709 |

[1]The per household costs do not include municipal administrative costs, which are factored on a per municipality basis here. So household costs are $0.23 less than as reported in Chapter 4.
[2]Annual costs per municipality based on estimated costs over a five year period. For reporting, costs are based on the number of reports over 30 years (an average of three reports in each permit term).
[3]Storm water pollution prevention plan.
Per acre costs are average costs from model simulations across three slope assumptions (3%, 7%, and 12%) and three soil erodibility assumptions (low, medium, and high).

### *Recordkeeping Requirements*

The proposed rule requires regulated entities to keep records required by the NPDES permit for at least three years after the permit term. The entities are required to submit their records to the NPDES permitting authority only when specifically asked to do so. The records, including the storm water management program, must be made available to the public at reasonable times during regular business hours. EPA estimates that the skill level needed for recordkeeping is a high school education or related work experience (US EPA, 1997b). Building contractors will be required to retain records of their NOIs, their storm water pollution prevention plans, and their notices of termination.

### *Other Requirements*

The costs shown in Exhibit 8–2 not associated with reporting and recordkeeping requirements reflect the other compliance requirements of the proposed rule. Under the proposal, NPDES permit holders must develop, implement, and enforce a storm water management program designed to reduce pollutants to the maximum extent practicable (MEP) and protect water quality. As part of this program, permit holders are required to identify and submit to their

NPDES permitting authority (in either the NOI or the permit application) the best management practices (BMPs) to be implemented and the measurable goals for each storm water minimum control measure. Permit holders must also identify the person or persons responsible for implementing or coordinating the storm water program, and identify the years in which they plan to start and complete the following measures (Draft Proposed Rule, February 13, 1997):

- ***Public education and outreach***. Permit holders must implement a public education program to distribute educational materials to the community or conduct equivalent outreach activities about the impacts of storm water discharges on water bodies, and the steps to reduce storm water pollution.

- ***Public involvement and participation***. Permit holders must comply with state and local public notice requirements.

- ***Illicit discharge and elimination***. Permit holders must:

  — Demonstrate awareness of their system, using maps or other existing documents, develop a storm sewer system map (or equivalent) showing the location of major pipes, outfalls, and topography. If data already exist, show areas of concentrated activities likely to be sources of storm water pollution.

  — Effectively prohibit (to the extent allowable under state law through ordinance, order, or similar means ) illicit discharges into their storm sewer systems, and implement appropriate enforcement procedures and actions.

  — Implement a plan to detect and address illicit discharges to their systems.

  — Take actions designed to inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste.

- ***Construction site storm water discharge control***. Permit holders must develop, implement, and enforce a program for construction sites that discharge into their separate storm sewer system. They must use an ordinance or other regulatory mechanism that controls erosion and sediment to the greatest extent practicable and allowable under state law. The program must control other waste at construction sites, such as discarded building materials, concrete truck washout, and sanitary waste. The program must include, at a minimum, requirements for construction site owners or operators to implement appropriate BMPs, provisions for preconstruction review and approval of site management plans, procedures for receiving and ensuring proper consideration of information submitted by the public, regular inspections during construction, and penalties to ensure compliance.
- ***Post-construction storm water management in new development and redevelopment.*** Permit holders must develop and implement programs to control

storm water discharges into their separate storm sewer system from development and redevelopment projects using site-appropriate and cost-effective structural and nonstructural BMPs. The programs must ensure that permit holders minimize water quality impacts.

- ***Pollution prevention and good housekeeping***. Permit holders must develop and implement a cost-effective operation and maintenance program with the goal of preventing and reducing pollutant runoff from municipal operations. If training materials are available from the NPDES authorities or from other organizations whose materials are approved by the local government, the programs must include local government employee training to prevent and reduce storm water pollution from government operations.

- Permit holders must comply with other applicable NPDES permit requirements and standard conditions established in the individual or general permit.

- ***Evaluation and assessment.*** Permit holders must evaluate program compliance and effectiveness of identified BMPs and measurable goals.

### 8.1.4 Revised Analysis of Potential Economic Impact

The initial SBREFA screening analysis concluded that the rule would not have a significant impact on a substantial number of small entities. Since then, the economic analysis for the rule has revised the municipal and building construction costs. To determine whether the revised cost analysis for the final rule alters this finding, EPA revised the initial screening analysis to incorporate updated costs to municipalities and building contractors.

***Municipalities***

EPA guidelines recommend a "revenue test" to evaluate the potential severity of economic impact on small municipalities. This test calculates total compliance cost as a percentage of total revenues. EPA used the same method to approximate municipality revenues in the revised analysis that was reported in the EA for the proposed rule. EPA approximated municipality revenues using population estimates and per capita revenue estimates from the 1992 Census of Governments. No attempt was made to escalate revenue to 1998 dollars, so revenues are most likely underestimated. For each small municipality, EPA estimated total costs by first multiplying the number of households in the municipality with the per household costs shown in Exhibit 8–2, and then adding the $1,525 fixed administrative cost. Total costs were then divided by municipal revenue to estimate the number of municipalities that had percentages greater than 1% and greater than 3%. EPA conducted this test for several per-household municipality costs in Exhibit 4–3 of Chapter 4.

The results of the revenue test and sensitivity analysis are reported in Exhibit 8–3. The results demonstrate that even if the assumption were made that per household costs for Phase II communities were equal to the 75$^{th}$ percentile of household costs in the Phase I sample, less than

20% of small governments affected by the rule will incur costs greater than 1%. Therefore, with respect to the mean per capita costs incurred by small municipalities, the rule can be considered not to have a significant impact on a substantial number of small municipalities.

**Exhibit 8–3. Revenue Test for Small Municipalities**

| Per Household Cost[1] | Per Municipality Administrative Costs | Small Municipalities with Costs Greater than 1% of Revenue (%) | Small Municipalities with Costs Greater than 3% of Revenue (%) |
|---|---|---|---|
| Median: $3.96 | $1525 | 118 (2.65%) | 25 (0.56%) |
| Mean: $8.93 | $1525 | 481 (10.80%) | 31 (0.70%) |
| 75th percentile: $10.17 | $1525 | 628 (14.10%) | 32 (0.72%) |

[1]The per household costs have been adjusted from those reported in Chapter 4 to remove the $0.23 per household in administrative costs because those costs are assumed to be the same for each municipality. The administrative costs, which were used to generate the $0.23 per household cost, were included in the revenue test as lump sum costs for each municipality.

### *Small Building Contractors*

US EPA (1997) guidelines recommend a "sales test" to evaluate the potential severity of economic impact of compliance costs on small businesses. This test calculates annualized compliance cost as a percentage of total sales. Because such a test was not feasible, the initial SBREFA screening analysis approximated the sales test by estimating compliance costs for three sizes of construction sites and then comparing those costs with a representative sale price for three building categories. The site size categories are one, three, and five acres and they represent the amount of disturbed land on the development site. The three building categories are: single-family homes, multi-family residences, commercial. Industrial building sites were not considered because they fall into the multi-sector general permit category. Institutional buildings were also not considered, as they are not typically built to be sold in the real estate market. These sales tests assume that all the compliance costs are incurred by the building contractor. However, as explained below, it is unlikely that the compliance costs — even if they exceeded 1% or 3% of sales for many construction businesses — would have a significant effect on these businesses because costs will be passed on to the eventual purchaser of the property.

Compliance costs were assessed on a construction development or start basis, and a construction start could include one or several buildings (particularly for single-family homes). So to compare the compliance costs with sales costs, an estimate of buildings per site size had to be made. EPA developed these estimates based upon construction data collected from 14 local jurisdictions from around the country. A detailed description of how these estimates were derived can be found in Appendix B–2. Ratios of buildings to construction starts are not based on a random national sample, so the mean number of buildings per construction start for the states affected by Phase II may vary from these ratios.

For single-family homes EPA divided the revised compliance costs per construction start by the appropriate homes-to-site ratio for each of the three sizes of construction sites. Exhibit 8–4 reports the median compliance costs per construction start (see Exhibit 8–2), and the estimated

per home costs, based on the estimated number of homes per start. The average compliance cost per home ranges from approximately $400 to $650.

As a proxy for the sales test, EPA divided the revised per home costs by the 1998 median and mean home sales prices, which are $151,000 and $181,300, respectively (US Bureau of the Census, 1999). Exhibit 8–5 reports the revised per home costs as a percent of median and mean home prices. These percentages range from 0.22% to 0.43% and they are lower than values reported in the initial SBREFA screening analysis, which ranged from 0.29% to 0.87%. These results suggest that under these assumptions, the compliance costs will not exceed 1% of sales for a construction business that builds and sells typical single-family homes.

Implicit in this sales test is the assumption that the party that receives the revenue from selling the newly built homes for the construction start, is also the party who incurs the cost for compliance with Phase II; all parties subcontracted to perform work on building the houses do not incur compliance cost and payment for their work is considered part of the developer's building costs. This is in keeping with the definition for "value of construction work done" in the 1992 United States Census of Construction Industries (US Bureau of the Census, 1996).

**Exhibit 8–4. Construction Start and Per-Home Compliance Costs by Site Size**

| Site Size (disturbed area) | Average Compliance Costs per Construction Start | Number of Homes per Site | Compliance Costs per Home |
|---|---|---|---|
| 1 Acre | $2,143 | 5.3 | $404 |
| 3 Acres | $5,535 | 8.5 | $651 |
| 5 Acres | $9,646 | 20.1 | $480 |

**Exhibit 8–5. Per-Home Compliance Costs as a Percent of Median and Mean Home Sale Price**

| Site Size (disturbed area) | Percent of Median Home Sale Price ($151,000) | Percent of Mean Home Sale Price ($181,300) |
|---|---|---|
| 1 Acre | 0.27% | 0.22% |
| 3 Acres | 0.43% | 0.36% |
| 5 Acres | 0.32% | 0.26% |

The initial SBREFA screening analysis noted that the cost to sales ratio was expected to be higher for single family housing than for the multi-family residential or commercial developments. Therefore, it was not considered necessary to also conduct screening analyses for those types of developments.

In response to comments that the post-construction runoff control measure may have a significant economic impact on builders, EPA has considered the possible associated costs for multi-family residential or commercial developments. The post-construction runoff control measure does not directly apply to construction operations, however municipalities may choose

to regulate construction developers in response to this requirement. In order to inform the public EPA conducted similar analysis to determine the potential economic impact of the combined incremental soil and erosion and post-construction runoff control costs on these developments.

There is some uncertainty surrounding the eventual impact of the post-construction runoff control costs. To begin, EPA is not directly requiring small entities to adopt specific control measures, instead EPA is requiring MS4s to develop storm water management programs that address post-construction runoff controls for new developments. This approach allows for much more flexibility in how localities and developers can address post construction runoff. Secondly, the post construction runoff control costs shown in Exhibit 8–6 are high end estimates. Many post-construction runoff controls can be incorporated directly into the site design for a new development, which often results in much lower control costs. In fact there is evidence that property values can actually be enhanced when controls are designed to increase the aesthetic value of the sites landscaping (Schueler, 1997).

**Exhibit 8–6. Best Management Practice Costs per Construction Site**

| **Soil erosion control costs per site Site Size** | | **Structural BMP construction costs per site[1]** | | | |
|---|---|---|---|---|---|
| | | **Impervious Surface Area[2]** | | | |
| | | **Site Size** | **35%** | **65%** | **85%** |
| **1 acre** | $1,206 | **1 acre** | $1,716 | $3,157 | $5,938 |
| **3 acres** | $4,598 | **3 acres** | $3,788 | $7,625 | $10,037 |
| **5 acres** | $8,709 | **5 acres** | $6,636 | $9,319 | $11,626 |
| | | **7 acres** | $10,479 | $18,020 | $40,919 |

[1] Post construction runoff control costs are the total control costs detailed in Appendix B–4, minus the capitalized operation and maintenance costs. Only the construction costs of the post construction controls were relevant to this analysis because the operation and maintenance costs will most likely not be borne by construction companies. Appendix B–4 provides a complete discussion of the post construction runoff control cost analysis.
[2] It is assumed that 35% imperviousness is associated with mulit-family residential, and 85% with commercial. The 65% imperviousness is representative of multi-family with high imperviousness, commercial with low imperviousness, and sites with a combination of the two building types. These impervious levels are based on a review of local government reports on average imperviousness by land-use (See Appendix B–4).

To conduct an analysis for multi-family residential developments, EPA performed a sales test, similar to the one for single-family homes, for condominiums and apartments. The first step was to determine the average number of multi-family units per start, for each site size category using the construction start data collected from the fourteen jurisdictions mentioned previously. Unfortunately, some of the data for multi-family developments did not report the number of units to be built on the site. However, because these were multi-family developments it could be assumed that at least two units were built on each site. So, when the number of units was not included in the data, EPA assumed there would be two units built on the site. From this data EPA was able to determine an estimate of the number of units per acre for each site size category. This estimate is should be considered a lower bound estimate, since it is very likely that the starts that did not report the number of units were building more than just two. The estimated units per acre were then multiplied by the acres for each site size to get the estimated

number of units per start. Exhibit 8–7 shows the estimated number of units per acre and per start.

**Exhibit 8–7. Estimated Number of Multi-Family Residencies per Start by Site Size**

| Site Size (disturbed area) | Estimated Number of Units / Acre | Estimated Number of Units / Start |
|---|---|---|
| 1 Acre | 9.7 | 10 |
| 3 Acres | 18.0 | 54 |
| 5 Acres | 6.6 | 33 |
| 7 Acres | 7.2 | 50 |

* The large value for the number of MFR units for the three-acre site size is the result of two outliers in the construction start data. The high values may be indicative of high rise developments.

For the second step, EPA used sale prices for both a condominium and a rental apartment to represent the price of a multi-family residential unit. The initial sale price for an apartment, $47,000, was the estimated mean price of an apartment unit based upon the 1993 Property Owners & Managers Survey (US Bureau of Census, 1993). The sale price used for a condominium, $119,700, is the median sale price for a condominium reported in the 1997 Survey of Market Absorption (US Bureau of Census, 1998). Both sale prices were adjusted to 1998 dollars using a 4.6% annual inflation rate based on the average sale price of a single-family home between 1995 and 1998 (US Bureau of Census, 1999). These sale prices were multiplied by the estimated number of units per start to determine the estimated sales per site size for both condominium and apartment developments.

Exhibit 8–8 shows the resulting sales per site, along with the ratio of compliance cost to sales for each site size. These percentages range from 0.17% to 0.91% and they are based on a very conservative estimate of the number units per site. These results suggest that under these assumptions, the compliance costs will not exceed 1% of sales for a construction business that builds and sells a typical apartment or condominium development.

**Exhibit 8–8. Estimated Multi-Family Residential Sales and Compliance Costs by Site Size**

| Site Size (disturbed area) | Compliance Costs per Site[1] | Estimated Number of Units per Site | 1998 Median Price Condominium ($125,209) | | 1998 Mean Apartment Price ($58,496 ) | |
|---|---|---|---|---|---|---|
| | | | Estimated Sales per site | Compl. Cost as % of Sales | Estimated Sales per site | Compl. Cost as % of Sales |
| 1 Acre | $4,579 | 10 | $1,252,090 | 0.37% | $584,960 | 0.78% |
| 3 Acres | $11,242 | 54 | $6,761,286 | 0.17% | $3,158,784 | 0.36% |
| 5 Acres | $17,623 | 33 | $4,131,897 | 0.43% | $1,930,368 | 0.91% |
| 7 Acres | $14,249 | 50 | $6,260,450 | 0.23% | $2,924,800 | 0.49% |

[1]The total compliance cost for the 1, 3, and 5-acre sites includes the soil erosions control costs and the post-construction runoff control costs, while total compliance costs for the 7-acre sites include only post-construction runoff control costs (See Exhibit 8–6).

The analysis for commercial developments differed slightly from those conducted for single-family and multi-family developments. To estimate the sales price of commercial buildings, EPA multiplied the 1998 mean price for a square foot of commercial office space, which is $145sq/ft (FDIC, 1999) by estimates of building size. To estimate the amount of office space per site, EPA used a floor area ratio (FAR) to estimate the amount of impervious surface devoted to floor area for a typical site. For commercial sites, typical floor area ratios will range from 0.25 to 0.5 (see Appendix B–2). Floor area is assumed to be a reasonable estimate of office space, even though it does not account for non-office area, since the most conservative FAR value was used. Also since the sale price of a commercial office site can be assumed to be based primarily on the amount of available office space, developers have an incentive to minimize the amount of non-office space within a building.

To calculate the square footage of floor area for each site category the FAR value of 0.25 was first multiplied by the estimated impervious surface coverage value of 65% (see Appendix B–2), then by the number of square feet per acre, and then by the number of acres in each site size category. Finally, to determine the sale price for a start in each site size category the mean price of a square foot of office by the square footage of floor area in each category.

0.25(FAR)*65%(imp.surf.)*43,560(sq/ft)*site size*$145= Estimated Sale Price of Start

Exhibit 8–9 reports both the estimated sale price of office space per site, and the ratio of compliance cost to sales price. These percentages range from 0.38% to 0.47%, and this suggests that based upon current assumptions, the compliance costs will not exceed 1% of sales. Therefore, it is assumed that a construction business that builds and sells a typical commercial office development will not incur compliance costs greater than 1% of sales.

**Exhibit 8–9. Estimated Commercial Office Space Sales and Compliance Costs by Site Size**

| Site Size (disturbed area) | Compliance Costs per Site[1] | 1998 Mean Commercial Office Price ( $145 sq/ft ) |
|---|---|---|

| | | Estimated Sales per site | Compl. Cost as % of Sales |
|---|---|---|---|
| 1 Acre | $6,691 | $1,539,574 | 0.43% |
| 3 Acres | $14,366 | $3,079,148 | 0.47% |
| 5 Acres | $20,118 | $4,618,721 | 0.44% |
| 7 Acres | $29,470 | $7,697,869 | 0.38% |

[1]The total compliance cost for the 1, 3, and 5-acre sites includes the soil erosions control costs and the post-construction runoff control costs, while total compliance costs for the 7-acre sites include only post-construction runoff control costs (See Exhibit 8-6).

### *Further Financial Analysis*

Regardless of whether the compliance costs constitute a 1% or greater share of small building contractor sales, EPA believes that the impact of the rule on contractors that build single family detached residences will be minimal because they are able to pass regulatory costs on to buyers (Nelson et al., 1992; and D. Mercer, National Association of Homebuilders, personal communication, April 1997). As discussed in Section 5.1.4.2 of the Economic Analysis for the proposed rule, the long run supply curve for new residential construction is assumed to be highly elastic, while the demand curve for new homes is considered to be relatively inelastic. Therefore, a change in the total cost of building a new home is expected to be born primarily by new home buyers. Since buyers are not addressed by the RFA and SBREFA, EPA is not required to evaluate the "significance" of the economic impact posed by these costs.

Comments on the initial SBREFA screening analysis state that most home buyers qualify for mortgages at the maximum payment to income ratio allowed by lenders and that a few dollar increase in monthly payments will in effect exclude potential home buyers. In particular, a 1% increase in the price of a median home would make 460,905 families ineligible to buy that home, resulting in either fewer homes or smaller homes being built, and subsequent unemployment in the construction industry. EPA believes the suggestion that most home buyers qualify for mortgages at the maximum payment to income ratio allowed by lenders is an overstatement. The typical payment to income ratio used by lenders is that monthly payments cannot exceed gross monthly income (i.e., pretax income) by more than 28%(MSN, 1999). According to results from the Chicago Title Corporation's 1998 Annual Survey of Recent Home Buyers, the average monthly payment as a percentage of after-tax income was 32.3% for 1998 home buyers (Chicago Title Corporation, 1999). A typical American family pays 35.4% of their gross income in taxes (Tax Foundation, 1999). Using this percentage to adjust the results from the Recent Home Buyer Survey, in1998 the average American home buyer used 21% of their gross monthly income on their home payments.

EPA believes that the potential impact of compliance cost on the median home price overstated. EPA's revised cost analysis for single family detached homes shows that the potential cost impacts are well below 1% of the median home price (see Exhibit 8–5). Furthermore, this cost increase will affect a very small share of the overall housing market. Over the past three years, the percentage of homes sold that were newly built was 21.6% (Chicago Title Corporation, 1999). Of newly built homes only 12% are estimated to be in developments affected by Phase II

Storm Water Rule (see Appendix B–3). So only 2.6% of all homes sold are likely to incur the cost increase.

## 8.2 Environmental Justice

Executive Order 12898 established a presidential policy for incorporating environmental justice into Federal agency missions by directing agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations. For example, to assist in identifying the need for ensuring protection of populations who principally rely on fish or wildlife for subsistence, the EO directs agencies, whenever practicable and appropriate, to collect, maintain, and analyze information on the consumption patterns of those populations, and to communicate to the public the risks of those consumption patterns.

As described in the above sections, the Phase II proposed rule addresses construction sites and municipal storm water sewer systems that have not been covered under Phase I. In addition, the CZARA addresses nonpoint sources (e.g., storm water runoff) located in the coastal zone. Finally, smaller communities outside of the coastal zone that may not be covered by either the Phase I or Phase II rules can be addressed by nonpoint source programs under the CWA. Therefore, with the promulgation of the Phase II rule, EPA's regulation of storm water runoff should be fairly comprehensive.

Environmental justice concerns for the regulation of storm water discharges may lie in the level of control resulting from the different regulations. In comparison to the Phase I rule, the Phase II rule has fewer requirements and offers substantial flexibility in meeting those requirements, particularly for small entities. (The Phase II rule addresses smaller municipalities and construction sites compared to Phase I, and a subset of these are defined as small entities by the Small Business Administration as noted in Section 8.1.) Thus, to the extent that fewer requirements and more flexibility results in less pollutant reduction, Phase II may result in disproportionate environmental impacts on small communities. However, small communities may not be disproportionately minority or low income.

Evaluation of the impact of the proposed Phase II rule on minority and low income populations would require information on the location of these populations with respect to waters receiving discharges regulated under the rule. This would most likely prove difficult because:

- Upstream water quality may affect downstream populations (such that the location of the affected municipalities and construction sites alone is not sufficient)

- The same water body may be affected by discharges regulated under both Phase I and Phase II (because different size communities can be located along the waterbody and its tributaries).

This information was not available for this analysis. In addition, the water quality impacts of the proposed rule may vary considerably because permitting authorities have considerable flexibility

in implementation, such as the ability to require permits for storm water sewer systems outside urbanized areas.

## 8.3 Unfunded Mandates

Title II of the Unfunded Mandates Reform Act of 1995 (Public Law 04-4; UMRA) establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and tribal governments as well as the private sector. Under section 202(a)(1)n of UMRA, EPA must generally prepare a written statement, including a cost-benefit analysis, for proposed and final regulations that "includes any Federal mandate that may result in the expenditure by State, local, and tribal governments, in the aggregate or by the private sector" of annual costs in excess of $100 million.[1] As a general matter, a federal mandate includes Federal Regulations that impose enforceable duties on State, local, and tribal governments, or on the private sector (Katzen, 1995). Significant regulatory actions require Office of Management and Budget review and the preparation of a Regulatory Impact Assessment that compares the costs and benefits of the action.

The rule is anticipated to cost both the public sector and the private sector more than $100 million/year for the time period analyzed. In particular, the Economic Analysis (EA) addresses:

- Section 202(a)(1) — authoring legislation (see EA Chapter 1 and the Preamble to the rule)
- Section 202(a)(2) — a qualitative and quantitative assessment of the anticipated costs and benefits of the regulation (see EA chapters 4 through 7 and accompanying appendices)
- Section 202(a)(3)(A) — accurate estimates of future compliance costs (as reasonably feasible; see EA chapter 4)
- Section 202(a)(3)(B) — disproportionate effects on particular segments of the private sector (see this chapter)
- Section 202(a)(3)(B) — disproportionate effects on local communities (see this chapter)
- Section 205(a) — least burdensome option or explanation required (see the Preamble to the rule)

Pursuant to UMRA section 203, before an agency establishes any regulatory requirements that may significantly or uniquely affect small governments, including Tribal governments, it must have developed a small governments agency plan. The plan must provide for notifying potentially affected small governments, enabling officials of affected small governments to have

[1]The $100 million in annual costs is the same threshold that identifies a "significant regulatory action" in Executive Order 12866.

meaningful and timely input in the development of regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, an advising small governments on compliance with the regulatory requirements. The Preamble to the final rule summarizes the extent of EPA's consultation with stakeholders including industry, environmental groups, states, local, and Tribal governments. The Preamble and comment-response document contain responses to their comments collected during the public comment period for the proposed and subsequent Notices of Data Availability (UMRA sections 202(a)(5) and 204).

Pursuant to section 205(a)(1)–(2), EPA has selected the "least costly, most cost-effective or least burdensome alternative" consistent with the requirements of the CWA for reasons discussed in the Preamble to this rule. A cost comparison in the EA for the proposed rule showed that high costs for alternative options (except the no action option) all exceeded $3.0 billion per year, which is substantially greater than the $803 million cost estimate provided in Chapter 4. Under the CWA §402(p)(6), EPA is required to design a regulatory program to control contaminated discharges associated with storm water runoff. This rule addresses contaminated storm water discharges from sources that were not included in the Phase I rule: small municipal separate storm sewer systems and construction activities at small construction sites (sites disturbing greater than or equal to one acre and less than five acres).